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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/701,682 | 02/06/2001 | Agostino Picciriello | 3606-0108P | 8003 |

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| EXAMINER |
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CHANG, EDITH M.

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2634 | |

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/701,682

Applicant(s)

PICCIRIELLO ET AL.

Examiner

Edith M Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date Z.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Objections

2. Claims 1-16 are objected to because of the following informalities:

Claim 1, page 60 line 17, the term "beamformed sequence" is suggested changing to "beamformed received sequence";

page 60 line 19, the term "said mean square error" lacks antecedence. It is suggested changing to "said square error" or changing the term "a square error" in line 15 to "a mean square error";

page 60 line 24, the term "said matched filter" is suggested changing to "the matched filter";

page 60 line 25, the term "the received data" is suggested changing to "the received signal";

page 61 lines 8-9, the term "the midamble" is suggested changing to "a midamble".

Claim 2, page 61 lines 22-23, the term "said optimized samples" is suggested changing to "the optimized samples";

Page 61 line 24, the term "said optimized weights" is suggested changing to "the optimized weights".

Claim 4, page 62 line 19, the term "said optimized samples" is suggested changing to "the optimized samples";

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Page 63 line 9, the term “said vector of optimum” is suggested changing to “the vector of optimum”;

Page 63 line 11, the term “said optimized weight vector” is suggested changing to “the optimized weight vector”.

Claim 5, page 63 line 14, the term “at step h5)” lacks antecedence. It is suggested changing to “at step d5)”.

Claim 6, page 63 line 19, the term “said matrix” is suggested changing to “the matrix”.

Claim 7, page 64 line 17, the term “said optimum weight vector” is suggested changing to “the optimum weight vector”.

Claim 9, page 64 lines 25-26, the term “said matrix” is suggested changing to “the matrix”.

Claim 11, page 65 line 11, the term “the first semiburst” is suggested changing to “a first semiburst”; line 12, the term “the second semiburst” is suggested changing to “a second semiburst”.

Claim 12, page 66 line 18, the term “said continuous monitoring means” is suggested changing to “the continuous monitoring means”;

Page 66 line 19, the term “said means” is suggested changing to “means”.

Claim 13, page 67 line 1, the term “said joint optimization means” is suggested changing to “the joint optimization means”;

Page 67 lines 13-14, the term “said element” is suggested changing to “the element”;

Claim 14, Page 67 line 25, the term “said vector” is suggested changing to “the vector”.

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Claim 15, page 67 line 27, the term "said joint optimization means" is suggested changing to "the joint optimization means";

Page 68 line 2, the term "said vector" is suggested changing to "the vector".

Claim 16, page 68 line 14, the term "said vectors" is suggested changing to "the vectors".
Appropriate corrections are required.

Allowable Subject Matter

3. Claims 1-2, 4-7, 9, 11-16 are objected to informality, but would be allowable if rewritten to overcome the objections.

4. Claims 3, 8, and 410 are objected as being dependent upon objected base claims, but would be allowable if the objected base claims overcome the objections.

5. The following is a statement of reasons for the indication of allowable subject matter:

Claim 1 is allowable over prior art of record because the prior art of record does not teach or suggest, alone or in a combination, among other things, at least a method for the cancellation of isofrequential interferers in signals received by array antennas of base stations of a cellular mobile system as a whole, the combination of elements and features as claimed, which includes: calculating a square error between the corresponding n -th samples of the estimate impulse response and the beamformed received sequence; joint optimization of the weights and samples and a modified joint optimization step for all duration starting from the instant n up to an instant $n+\Delta T$ of a transient devoted to the rejection of strong interferent outside a midamble.

Claim 12 is allowable over prior art of record because the prior art of record does not

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teach or suggest, alone or in a combination, among other things, at least an equalizer in receivers of base station as a whole, the combination of elements and features as claimed, which includes: means for calculating a square error from the comparison between the corresponding n-th samples of the estimate impulse response and the beamformed sequence; means for the joint optimization of the weights and samples; selection means for the selection of means for the joint optimization of weights and samples, and for the selection of means devoted to the rejection of a strong interferent. The means devoted to the rejection is operative for the all duration starting from the instant n up to an instant $n+\Delta T$ of a rejecting transient as recited in the claim.

Conclusion

6. This application is in condition for allowance except for the following formal matters:
As listed in the paragraphs 1 and 2.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M Chang whose telephone number is 703-305-3416. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
June 22, 2004



**CHIEH M. FAN
PRIMARY EXAMINER**